iPAD USE AND STUDENT ENGAGEMENT IN THE CLASSROOM

Oraib Mango, PhD
Assistant Professor
World Languages and Literatures
California State University, San Bernardino
OMango@csusb.edu

ABSTRACT
iPads and handheld digital devices have been securing their place in educational institutions surrounded by debates between advocates and skeptics. In light of not enough evidence supporting the use of iPads in education, this study examined the ways that college students in two foreign language classrooms perceived the influence of the use of iPads on their learning and engagement with classroom activities. The participants, students enrolled in two foreign language classrooms at a college in the Southwest of the US, responded to a 5-point Likert type questionnaire. The data analysis and results showed that students believed that the iPads played a significant role in their learning engagement thus promoting active learning in the classroom and paving way for student success.

INTRODUCTION
Handheld devices especially iPads have been finding their places in schools all over the world. While the number sold to educational institutions is not known, since their launch in 2010 and by October 2013, Apple had sold 170 million iPads (Jones, 2013). It is clear that these handheld devices have not only become part of our daily lives but are likely to stay with us and in our schools for a long time.

Many educators are enthusiastic about the use of iPads in education; they rave about their versatility, connectivity, mobility as well as the potential benefits of thousands of educational apps. However, there has not been consensus among educators regarding the benefits of these devices in education; some educators remain skeptical, wary that the iPad may become the center of the classroom instead of being used as a tool for learning (Hu, 2011). Nonetheless, in this mixed atmosphere of anticipation and skepticism, the number of American colleges and k-12 schools that have launched iPad pilot studies or/and adopted 1:1 iPad initiatives is on the rise (Diemer, Fernandez & Streepey, 2012; Hu, 2011).

In light of the lack of inconclusive evidence of the influence of iPads in education, and with the high expectations of their potential influence on transforming education; in this study, I investigated the impact of the use of iPads in the classroom at the college level. In particular, I investigated students' perceptions of the influence of the use of iPads on their learning as well as on their engagement with classroom learning in two foreign language classrooms in a university in the Southwest of the US.

REVIEW OF THE LITERATURE
Research has shown that student engagement is linked to positive learning outcomes (Diemer et al., 2012) and "is positively related to both grades and persistence" (Kuh, Kinzie, Buckley, Bridges & Hayek, 2006). While there have been many definitions of student engagement, there is no consensus among scholars as to what exactly counts as such. In this study, student engagement refers to "the extent to which [students] take part in educationally effective practices," (Kuh, as cited in Axelson and Flick, 2011, p. 40) in the classroom. Student engagement is multilayered and includes different categories that are equally salient. Fredricks, Blumenfeld and Paris (2004) include the following categories within the concept: behavioral, cognitive and emotional. Behavioral engagement includes involvement in activities related to academic success and take place when students are physically involved in effective learning practices and activities. Emotional engagement is thought to occur when students have a positive attitude and enjoy what they are doing; while cognitive engagement is thought to take place when students invest into learning in a focused, self-regulating and strategic way (Fredricks et al., 2004). It is important to note that all these layers are equally important and are all present when students are actively engaged in educational activities (Fredricks et al., 2004). Active learning is closely connected to student engagement; it takes place, as Prince (2004) explains, when students are doing meaningful activities in the classroom while thinking about what they are doing, hence "the core elements of active learning are student activity and engagement in the learning process" (p. 223)

While there are research studies which have yielded inconclusive results of the impact of the use of iPads in education (see for example Falloon, 2013 and Crichton, 2012), through a review of the literature, Clark and Luckin (2013) reported that studies have "overwhelmingly" reported that "tablet devices have a positive impact on students' engagement with learning" (p. 4). Similarly, Diemer et al. found that the use of iPads in the

Copyright © The Turkish Online Journal of Educational Technology

classroom increased students' perception of their engagement and in turn left a positive effect on students' active and collaborative learning (2012). In another study, Hargis, Cavanaugh, Kamali and Soto (2014) reported that students who used iPads gained empowerment as they became researchers and more independent learners.

Swan, Hooft, Kratcoski and Schenker (2007) investigated the effect of the use of technology including handheld devices on student learning in 1-1 computing classes. Their results showed increased student motivation and engagement in comparison with students who attended regular classrooms. They also found that teaching and learning in the computing classes were more "student-centered, collaborative, project-oriented, constructivist, and flexible" (p. 509).

Instead of focusing on students' perceptions, Benton studied teachers' perceptions of the use of iPads in education. The k-20 teachers in his study reported that the device had a positive impact on student learning and engagement. The teachers' perspectives were based on improvements they noted in their students' quality of work and their time on task (Benton, 2012).

Student perception of learning is an important indicator of student success. According to Kuh et al. (2006), students' perceptions affect student satisfaction and the way students approach their studies in terms of the time and effort they "expend on educationally purposeful activities, which consequently have direct effects on their learning and personal development**"** (p.40). Moreover, the more students are motivated and the more they enjoy the class, the more they perceive gains in their learning (Gurung & Vespia, 2007).

RESEARCH QUESTIONS

The purpose of this study was to investigate the effects of the use of iPads on students' active learning according to students' perspectives. I specifically investigated students' perceptions of the influence of the use of iPads on their learning of Arabic as a foreign language, on their learning engagement as well as their collaboration with their classmates.

The main questions of the study were the following:

I. How do students perceive the impact of the use of iPads on their learning of Arabic?

2. How do students perceive their engagement with learning during classroom activities when using iPads?

METHOD

PARTICIPANTS

The participants in the study were thirty five students from two college level classes of Arabic in a university in the Southwest of the US. The students were enrolled in two classes of first year Arabic as a foreign language during the 2013/2014 academic year. Students in both classes were taught by the same instructor and all used iPads in their learning of Arabic according to activities that were pre-designed by the instructor. On average, the students used the iPads once a week for 30-45 minutes for duration of 10 weeks. All students were given surveys to fill in by the last week of classes to gauge their perception of their learning and engagement while using the iPads.

The iPads that the students used were property of the foreign language department in the university. Students could also check them out from the language lab of the same department. Each week, the instructor gave instructions for an activity directly related to the lesson covered during that week, explained its objectives and then pointed the students toward the app to be used for that activity. Student then worked collaboratively on the assignments before submitting them electronically.

Students used the iPads for different classroom activities that involved the creation of mini projects that combined visual, aural and oral practice. The mini projects aimed at offering hands-on practice that combined speaking, listening, reading and writing skills as well as promoting collaboration and creativity. The apps that were used included the following: Educreations, Doodle buddy, Aviery, StoryKit, ShowMe, Screen Chomp, and Comic Life. Students could also consult internet resources for their assignments if they chose to.

Because the aim of the activities was not only to facilitate learning, but also to encourage creativity and collaboration, students were given guidelines that were flexible enough to allow them the freedom to innovate and explore different ways to conduct the projects that were assigned to them. During the first two weeks, students were given extra time to get acquainted with the devices and were handed written as well as verbal instructions for assignments. In subsequent weeks, the instructor gave students verbal instructions, explained the objectives and expected outcome of each activity, and gave instructions for project submission. Most of the

Copyright © The Turkish Online Journal of Educational Technology

activities involved group work and students had the freedom to choose any of the apps they had learnt about. Except for the writing and typing practice, all the projects and activities were submitted online.

QUESTIONNAIRE INSTRUMENT

The questionnaire items were developed by the researcher and were derived from Diemer et al.'s (2012) student engagement questionnaire. Three items in the questionnaire aimed at exploring students' perceptions of their learning (see Table 1). The six other items aimed at gauging students' perceptions of their engagement in classroom activities. As was mentioned earlier, student engagement is multidimensional. While these dimensions cannot be separated, and notwithstanding the overlap between these dimensions, the first four items in Table 2 are geared more toward investigating behavioral and cognitive engagement while the fifth and sixth items aimed at giving feedback on students' emotional engagement.

A 5-point Likert-type questionnaire was used in this study. Participants were instructed to state their level of agreement with each questionnaire item ranging from 5= Strongly Agree (SA) to 1= Strongly Disagree (SD).

ANALYSIS, DISCUSSION AND RESULTS

For the purpose of this analysis, data were divided into two parts. The first part included questions that aimed at gauging students' perceptions of their learning when using the iPad, and the second part aimed at investigating their engagement with classroom activities when using the iPad. The analysis of the questionnaire data was performed using Excel. Means and standard deviations were calculated for descriptive data.

To answer the first research question regarding students' perceptions of the impact of the use of iPads on their learning, means and standard deviations were calculated. As mentioned earlier, students indicated their level of agreement with each questionnaire item on a scale that ranged from 5= Strongly Agree (SA) to 1= Strongly Disagree (SD). Three items on the questionnaire were related to the first research question. The means of the students' responses to these items ranged from 4.14 to 4.21 (see Table I), with an overall mean of 4.18.

TABLE 1. STUDENTS' PERCEPTIONS OF THE IMPACT OF I-PADS ON THEIR LEARNING

	Item	Mean	SD
1	The use of iPads helped my learning in this class	4.14	.81
2	The iPad served as a learning aid	4.2	.90
3	Using the iPad helped me understand the learning material	4.21	.93
	Overall mean	4.18	

The overall mean (Table 1) indicates that students found the iPad an effective tool that helped them learn. This result agrees with the results of other studies that investigated students' learning and engagement when using iPads (see for example; Diemer et al., 2012 and Benton, 2012).

In terms of students' perceptions of their engagement and involvement with classroom activities, collaboration with others, as well as their enjoyment of the use of iPads in the classroom (see Table 2), the means of the responses of the first four questions (4-7) ranged from 4.18 to 4.43 which indicates a positive impact on student engagement. The mean for item 9, was 1.69 which agrees with the results above since this question asked about students' perception of the iPad as a distraction in class. A mean of 1.69 indicates that most students strongly disagreed (1) or disagreed (2) with the statement "the iPads distracted me from classwork". Out of the 35 participants, only one indicated that iPad use distracted him/her from class work. The item that yielded the lowest mean (3.67) asked students whether or not they agreed with the statement "I concentrated better on my language learning when using the iPads to accomplish a language task". Most of the students agreed or strongly agreed with that statement. However, many of them were neutral or undecided while four of the students disagreed (2) or strongly disagreed with that statement (1). While students' engagement with the iPads was high as indicated by the rest of the questionnaire, many students were undecided regarding whether or not the iPads allowed them to concentrate more on their language tasks.

TABLE 2. STUDENTS' ENGAGMENT IN THE CLASSROOM

	Item	Mean	SD
4.	Use of iPads helped me participate in class activities	4.4	.81
5.	Use of iPads in the classroom facilitated my collaboration with other students	4.43	.98
6.	I enjoy using the iPads for class activities	4.31	.87
7.	iPads allowed me more creativity in designing class projects and assignments	4.18	1.07
8.	I concentrated better on my language learning when using the iPads to accomplish	3.67	1.1

Copyright © The Turkish Online Journal of Educational Technology

	a language task		
9.	The iPad distracted me from class work	1.69	0.93

The highest means were for items related to student participation and collaboration with each other. The mean for item 5 which aimed at investigating the influence of the iPads on student collaboration in class was 4.43. Second to that was the mean of the item investigating the influence of the iPads on student participation in class (4.4) followed by students' enjoyment of the use of iPads for class activities (4.3). While the differences between the means of the items in Table 2 are minimal, nevertheless, these agree with what the researcher observed in class; students' participation in class activities and their interaction with each other were remarkably enhanced when using the iPads to work on common projects. The researcher noted that inter- as well as intra-group relations were enhanced during that time. As students worked together to solve a common problem, they were quick to share with each other what worked and what did not as they fulfilled the requirements of a certain project. Student enjoyment of using the iPad was noted in the classroom which agrees with students' responses to item 6 in Table 2 "I enjoy using the iPads for class activities"; as the means to that question was 4.31. In fact, only one person strongly disagreed with the statement while three students' responses were neutral.

These results are very significant since as was discussed earlier, students' satisfaction with their learning experiences is important for their success in college. This is especially salient here that students' enjoyment also went hand in hand with their perceptions of the positive impact of the iPads on their learning; students not only enjoyed using the iPads but also saw them as effective learning tools. As mentioned earlier, there is an indirect effect of students' perceptions on their actual learning. Positive perceptions lead to more student engagement which, in turn, is linked with higher achievement and persistence; two important components for student college success (Kuh et al. 2006).

CONCLUSION

This study investigated student engagement when using the iPads in two foreign language classrooms at the college level. The results indicated that students not only enjoyed using the iPads but also believed that the iPads helped them learn. Students also believed that the devices facilitated their participation and collaboration in class. These results are significant because as was stated earlier, the more students are engaged with their learning, the more they are likely to succeed in college as there is a link between engagement and students' academic achievements and persistence in college (Kuh et al.). Collaboration is also linked with student success as it "enhances academic achievement, student attitudes, and student retention" (Prince, 2004, p. 5). Hence, in this study, iPads according to students' perceptions were found to enhance students' learning and engagement with classroom activities facilitating students' collaboration between each other and their participation in classroom activities.

This study is not without limitations. It was conducted on a limited number of participants and only on first year students of Arabic as a foreign language. It should also be noted that the nature of the activities that the iPads were used for were carefully designed to enhance engagement in the classroom by providing students with iPad tasks and activities that allowed them to: collaborate, use their talents, assume responsibility and ownership of their work as well as provide for fun opportunities, which are all part of what is important for learning engagement (Fredricks et al., p. 79).

It should be emphasized here, as was expressed by other academics (see for example Clark and Luckin, 2013), that the iPad is a tool and not and end in itself and should only be used as such by learners who must always be at the center of the classroom.

REFERENCES

Axelson, R. D. & Flick, A. (2011). Defining student engagement. *Change: The Magazine of Higher Education,43* (1), 38-43.

Benton, B., K. (2012). *The iPad as an instructional tool: An examination of teacher implemention experiences* (Doctoral Dissertation). Retrieved from Proquest Dissertations & Theses New Platform. (UMI 3516595)

Clark, W. & Luckin, R. (2013). What the research says: iPads in the classroom. London Knowledge Lab Report. Retrieved from http://digitallearningteam.org/

Crichton, S, Pegler, K and White, D. (2012). Personal devices in public settings: Lessons learned from an iPod Touch / iPad Project. *The Electronic Journal of e-Learning, 10* (1) 23-31.

Diemer, T.T., Fernandez, E., & Streepey, J.W. (2012). Student perceptions of classroom engagement and learning using iPads. *Journal of Teaching and Learning with Technology, 1* (2), 13-25.

Falloon, G. (2013). Young students using iPads: App design and content influences on their learning pathways. *Computers & Education, 68*, 505-521.

Copyright © The Turkish Online Journal of Educational Technology

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: potential of the concept, state of the evidence. *Review of Educational Research, 74* (1), 59-109.

Gurung, R. A. & Vespia, K.M. (2007). Looking good, teaching well? Linking liking, looks, and learning. *Teaching of Psychology, 34* (1) 5-10.

Hargis, J., Cavanaugh, C., Kamali, T. & Soto, M. (2014). A federal higher education iPad mobile learning initiative: Triangulation of data to determine early effectiveness. *Journal of Innovative Higher Education, 39* (1) 45– 57.

Hu, W. (2011, January 4). Math that moves: Schools embrace the iPad. *The New York Times.* Retrieved from http://www.nytimes.com/

Jones, C. (2013). Apple's New iPads Should Lead to Record Sales in the December Quarter. *Forbes*. Retrieved from http://www.forbes.com/sites/chuckjones/2013/10/23/apples-new-ipads-should-lead-to-recordsales-in-the-december-quarter/

Kuh, G., D., Kinzie, J., Buckley, J., A., Bridges, B., K., and Hayek, J., C. (2006). What matters to Student Success: A review of the literature. National Symposium on Postsecondary Student Success Report. Retrieved from http://nces.ed.gov/npec/pdf/kuh_team_report.pdf

Prince, M. (2004). Does active learning work? *Journal of Engineering Education, 93* (3) 223-231.

Swan, K., Hooft, M., V., Kratcoski, A. & Schenker, J. (2007). Ubiquitous computing and changing possibilities: Representations, conceptualizations and uses of knowledge. *Journal of Educational Computing Research, 36* (4) 481-515.

Copyright © The Turkish Online Journal of Educational Technology